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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,049	06/20/2003	Thomas N. Chalin	WCMI-0035	6461
20558	7590	08/18/2006	EXAMINER	
SMITH IP SERVICES, P.C. 660 NORTH CENTRAL EXPRESSWAY SUITE 230 PLANO, TX 75074			BELLINGER, JASON R	
			ART UNIT	PAPER NUMBER
			3617	

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/600,049	Applicant(s) CHALIN ET AL.	
	Examiner Jason R. Bellinger	Art Unit 3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-42 and 44-52 is/are pending in the application.
- 4a) Of the above claim(s) 5-12, 22-29, 37, 40-42 and 45-52 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4, 13-21, 30-36, 38-39, 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Amendment***

1. In light of the discovery of a new reference that reads on the claims, the finality of that action has been withdrawn, and a new rejection based on the newly cited Bria et al reference is found below.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2-4, 13-14, 17-18, 30-31, 33, 36, 38, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Bria et al. In Figures 7, 8, and 8A, Bria et al shows a suspension system 150 including an axle assembly 149. The axle assembly 149 includes an axle 152, at least a portion of which can be made from a composite material (see paragraphs [0104] - [0106]). At least two beams (172a-b) are attached to the axle 152, wherein the beams (172a-b) pivot relative to a vehicle frame.

The axle 152 extends through each of the beams (172a-b). At least two metal sleeves 155 are secured exteriorly about the composite axle 152, and each of the beams (172a-b) is attached to a respective sleeve 155. The composite axle 152 extends through each of the sleeves 155. The sleeves 155 act as axle seats.

A spindle 154 is attached to the composite axle 152, and attached to a sleeve 153 that at least partially overlies the composite axle 152. The sleeve 153 includes an

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axle seat 153a. A portion of the composite axle 152 is received with the interior of the spindle 154. The spindle 154 may be bonded to the composite axle 152 (by being bonded to the sleeve 153, which is bonded to the axle 152. See paragraph [0103]).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bria et al. Bria et al contains all of the limitations as set forth in paragraph 3 above, but does not specify that the spindle 155 is welded to the sleeve 153. As stated in lines 12-15 of paragraph [0103], Bria et al states that the spindle 155 may be bonded to the sleeve 153.

It is well known in the art that welding is a method of permanently bonding two or more elements together. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to weld the spindle to the sleeve, for the purpose of creating a permanent bond therebetween, thus preventing relative movement between the spindle and sleeve, which would reduce wear on the components.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over VanDenberg in view of Gimlett et al. VanDenberg shows the use of an axle 19 attached

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to a suspension system. Namely, at least two beams 15 are attached to the axle 19 for pivoting displacement of the axle 19 relative to a vehicle frame 2. The axle 19 extends between and through each of the beams 15.

VanDenberg does not show at least a portion of the axle being made of a composite material. Gimlett et al teaches the use of a hollow axle 2, at least a portion of which is made from a composite material 3. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to form at least a portion of the axle of VanDenberg from a composite material for in order to reduce the weight of the axle (and therefore entire assembly) without sacrificing the strength, etc. characteristics of a solid steel axle.

7. Claims 13-21, 30-36, 38, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over VanDenberg in view of Gimlett et al as applied to claims 2-4 above, and further in view of Aton. VanDenberg as modified by Gimlett et al does not show at least two metal sleeves secured to the axle.

Aton teaches the use of an axle assembly including an axle 2 and a spindle 1 attached to the axle 2. The spindle 1 is attached to a sleeve 12 that at least partially overlies the axle 2. An axle portion 5 is received within an interior 4 of the spindle 1. While not shown, the axle 2 of Aton would include at least two metal sleeves 12 secured exteriorly about the axle 2. Aton would also include two spindles 1 attached to the respective sleeves 12. The axle 2 extends through the sleeves 12 (namely, axle portion

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5 extends through the sleeves 12). An axle portion 5 is received within an interior 4 of the spindle 1.

While not shown, the spindle 1 could be welded to the sleeve 12, in order to reduce the number of parts required to form the axle assembly, thus reducing assembly time. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the composite axle of VanDenberg as modified by Gimlett et al with the physical features (i.e. sleeve, spindle, etc.) of Aton in order to allow a plurality of different types and sizes of wheels to be used on the vehicle, while allowing replacement of the spindles in the event of damage to the spindles.

The sleeves 12 of Aton could be attached to a respective one of the beams 15 as shown in VanDenberg. As shown in VanDenberg, the portion of each beam end 18 that surrounds the axle 19 acts as a pair of axle seats. These axle seats would be interconnected between the sleeves 12 of Aton and the beams 15 of VanDenberg. Furthermore, the sleeves 12 of Aton would be bonded to the axle composite portion (such as in the manner set forth in column 5, line 61 through column 6, line 3 of VanDenberg) in order to prevent axial movement of the sleeves and/or axle during operation of the vehicle. The sleeves 12 of Aton could also be "welded" to the beams 15 of VanDenberg, by heat fusing the composite material of the beams 15 to the sleeve 12 of Aton, as an alternative to adhesively bonding the two elements together, dependent upon cost and the exact type of connection required.

When given the configuration of Aton, the composite axle 2 (of Gimlett et al) would include a portion (5 as shown in Aton) that extends into each spindle 1. While not

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shown, one of ordinary skill in the art would find it obvious to bond the spindle 1 to the composite axle 2 (of Gimlett et al) in order to reduce the amount of relative rotation between the axle and spindle during operation, thus preventing failure of the assembly, increasing safety considerations, and reducing wear between the components.

8. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over VanDenberg in view of Gimlett et al and Aton as applied to claims 13-21, 30-36, 38, 40, 44 above, and further in view of Bradley. VanDenberg as modified by Gimlett et al and Aton do not show the spindle including a brake mounting attached thereto.

Bradley teaches the use of a spindle 12 that includes a brake mounting 38 attached thereto. Therefore from this teaching, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a brake mounting on the spindles of VanDenberg as modified by Gimlett et al and Aton for the purpose of allowing a brake element and/or wheel to be mounted onto the spindle, as is well known in the art, thus providing a means to retard the rotation of a wheel mounted on the spindle.

### ***Response to Arguments***

9. Applicant's arguments filed 7 June 2006 have been fully considered but they are not persuasive.

The Applicant's argument that the VanDenberg and Gimlett et al references teach directly away from one another is unpersuasive. The Gimlett reference teaches

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the use of a composite axle with at least a portion 3 of the axle made from a composite material. This axle 2 includes a hollow steel core 4 bonded with a composite material 3. Therefore, the axle of Gimlett would have a modulus of elasticity similar to that of the axle shown in VanDenberg, which would be significantly higher than the modulus of elasticity of the beam assemblies. One of ordinary skill in the art would have found it obvious to provide the assembly of VanDenberg with the axle taught by Gimlett for the reasons set forth in paragraph 6 above.

The Applicant argues that there is no motivation to combine the VanDenberg and Gimlett et al references, stating that there is "not even the premise that the references could be combined (how would a rotating axle be attached to a pivoting beam?". It should be noted that Gimlett et al was used only to teach the structure of a composite axle, and was not literally combined with the VanDenberg reference.

The Applicant further argues that neither reference discloses the manner in which the composite axle is attached to the beams. However, it should be noted that this attachment was fully described in the rejections set forth above.

Regarding the Bradley reference, the Applicant argues that it is unclear how the brake element could be attached to a composite axle portion. It should be noted that the Bradley reference was not literally combined with the other references. Furthermore, it should be noted that the method in which the components are attached to each other receives little to no patentable weight in an apparatus claim. See MPEP 2113.



The last paragraph on page 23 of the Applicant's response generally infers that the instant invention solves a long-felt need in the art. However, the Applicant has not provided any evidence (such as affidavits or declarations) supporting such a claim.

**10.** In response to applicant's argument that the Gimlett et al reference is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In this case, the Gimlett et al reference is used to teach a hollow axle having a composite portion. One of ordinary skill in the art at the time of the invention would have found the teaching of this reference compelling to substitute the solid metal axle of VanDenberg with a hollow composite axle in order to reduce the weight of the axle assembly, which would contribute to increased fuel economy, etc.

**11.** In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

In this case, the Applicant argues that Aton does not disclose the use of composite axles. However, Gimlett et al was used to teach the use of a composite axle, while Aton was used to teach the connection of a spindle to an axle using a sleeve.

**12.** In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

### ***Conclusion***

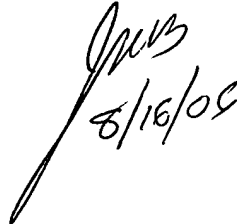
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Bellinger whose telephone number is 571-272-6680. The examiner can normally be reached on Mon - Thurs (9:00-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Morano can be reached on 571-272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason R Bellinger  
Primary Examiner  
Art Unit 3617



8/16/08